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AD NUMBER

AD343710

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AUTHORITY

**OACSFOR D/A ltr dtd 13 Sep 1973; OACSFOR
D/A ltr dtd 13 Sep 1973**

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ARMY CONCEPT TEAM IN VIETNAM
APO 143, San Francisco, California

ACTIV-AM

5 September 1963

SUBJECT: Utilization of the CV-2B in the Medical Evacuation Role (U)

TO: Commanding General
U.S. Army Combat Developments Command
Fort Belvoir, Va.

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1. The Army Concept Team in Vietnam conducted an evaluation of the CV-2B (Caribou) airplane in a medical evacuation role as part of the Caribou test that took place between 1 February and 31 July 1963.
2. The evaluation was authorized by CGUSACDC after the final test plan was approved.* Therefore the report of the evaluation of the Caribou airplane in a medical evacuation role is forwarded herewith separately rather than as part of the final Caribou report.
3. The final Caribou report, which addresses itself to eleven other objectives, is in production and will be distributed in the near future.

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as

THOMAS O. BLAKENEY
Colonel, Armor
Chief

* TWX SDEC-DO S-138 dated 131855Z from CGUSACDC to Chief ACTIV.

Copies furnished:

Commanding General, US Army Mobility Command,
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Commanding General, US Army Test and Evaluation Command,
Aberdeen Proving Ground, Maryland
Command General, US Army Aviation and Surface Command,
St. Louis, Missouri
President, US Army Aviation Test Board,
Fort Rucker, Alabama
ACTIV Liaison Officer, Department of the Army,
Washington 25, D.C., ATTN: Lt Col J. Gude
Commanding Officer, USACDC Aviation Agency,
Fort Rucker, Alabama

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Washington 25, D.C.
Commanding Officer, 7th Field Hospital, APO 40, U.S. Forces
ATTN: Surgeon General

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UTILIZATION OF THE CV-2B CARIBOU IN THE MEDICAL EVACUATION ROLE

1. Objective

"To evaluate the CV-2B (Caribou) airplane in the Medical Evacuation Role."

2. Discussion

a. Supplemental aero-medical evacuation is a mission of all Army units that have a passenger-carrying capability. Air medical evacuation missions can be described as either emergency or preplanned. For preplanned missions advance notice is given to aircrews; medical personnel are made available; and medical supplies, including litters, are placed aboard the aircraft. For preplanned medical evacuation missions the aircraft load configuration is easily and readily determined. However, the load configuration for emergency evacuation is not always easily determined.

b. The CV-2B pilots in the Republic of Vietnam (RVN) have encountered a perplexing problem during emergency air evacuation missions. Often when Caribou were diverted to pick up casualties, qualified medical personnel were not available at the pickup point to instruct the aircrews on the seriousness of the injuries or the destination to which the casualties should be taken. The aircrews thus had to make decisions of a medical nature. Standing operating procedures should be developed to explain emergency medical evacuation policies to be followed when qualified medical personnel are not available. (The Commanding Officer, 7th Field Hospital is working on this project.)

c. Monthly Caribou Test Report Number 3 noted as a problem area the lack of an oxygen supply for patients being transported via the CV-2B. Subsequent research indicates that this problem is not as serious as first envisioned. A permanently installed oxygen system for passenger (patient) use is not an essential requirement. This observation is based on the following factors:

(1) To date, in all CV-2B medical evacuation missions within the RVN, the patients were safely and comfortably delivered to a medical facility even though oxygen was not available aboard the airplane.

(2) Medical facilities are so located in the RVN that flights from remote pick up points to medical facilities are seldom more than one hour in duration.

(3) Flights above 10,000 feet are the exception rather than the rule for the CV-2B airplane in the RVN. (Oxygen is normally not required below 10,000 feet.)

Incl 1

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(4) Air medical evacuation missions for the CV-2B airplane in the RVN have not been performed in sufficient numbers to warrant the extra weight or the cost of installation of a passenger oxygen system.

d. In those individual cases where oxygen would be required, a portable oxygen kit (walk-around bottle) would suffice. The 1962 model CV-2B airplanes are so equipped.

e. Ground-to-air and air-to-ground communications in the RVN do not have sufficient range to provide the response necessary to effect the immediate evacuation of serious casualties. Consideration should be given to providing high frequency single side band (HFSSB) radios in all Caribou airplanes and key ground installations.

f. According to Army doctrine the "air ambulance" is not special-purpose in design, but is special-purpose in utilization. The CV-2B suits this concept: it can haul passengers and cargo and can be converted into an air ambulance in thirty minutes when the need for such a mission arises. Appendixes 1 and 2 give two examples of CV-2B medical air evacuation missions flown in the RVN. Upon completion of both of these missions the Caribou were quickly converted from the medical evacuation configuration to the cargo-passenger configuration.

3. Findings

a. Operations in the RVN have shown that a permanently installed passenger oxygen system is not required in the medical air evacuation role of the CV-2B.

b. Standing operating procedures for emergency medical evacuation are required by aircrews for guidance in the absence of qualified medical personnel.

c. Communications problems can be reduced by installing high frequency single side band radios in the CV-2B's and at selected ground installations, including medical dispensaries and hospitals.

d. The Caribou can be converted rapidly from a cargo-passenger airplane to an air ambulance, and vice versa.

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APPENDIX 2

MEDICAL EVACUATION FROM CUNG SON

At four o'clock one morning in mid-August, 1962, the officer in charge of the two II Corps Caribou stationed at Nha Trang received a telephone call from Corps headquarters at Pleiku, 140 miles away alerting a Caribou for a medical evacuation mission at first light. It was reported that the fortified hamlet at Cung Song (BQ 810 415) had been under attack during the night and several wounded needed to be evacuated to a hospital as soon as possible. A Caribou crew proceeded immediately to the airfield to prepare its aircraft for take-off at dawn.

The weather over Nha Trang was broken to overcast at 5000 feet. The pilots decided to use the local ADF holding pattern, orienting on the Nha Trang non-directional homing beacon, to make a climb-out on instruments to VFR conditions on top. Once on top they could proceed on a direct route to Cung Son. Nha Trang tower issued the Caribou a clearance, and the aircraft took off at 0515 and climbed to VFR on top at 7000 feet. Using a magnetic heading and time-distance navigation, the Caribou proceeded to the Cung Son area.

Arriving over the Cung Son area, the Caribou pilots found a solid overcast. The Caribou let down to just on top of the overcast, and then, while flying large orbital pattern, the crew attempted to contact the Special Forces team on the ground at Cung Son. Contact was finally made and the aircrrew asked for the ceiling and visibility conditions at the airstrip. The Special Forces team leader informed the Caribou that the ceiling was "pretty low," but that visibility was approximately two miles. He stated that conditions looked better down the valley to the east.

The Caribou crew informed the Special Forces team leader that the Caribou would turn east toward the coast, try to find a hole to do down through, then attempt to return up the valley to the airstrip. Upon reaching the coast a VFR letdown was made over the water, and the aircraft returned to Cung Son flying up the river valley at 200 foot altitude. The 1000 foot sod strip at Cung Son was finally located and a landing was made with no difficulty.

Upon landing the Caribou was immediately loaded with eight litter and twelve ambulatory patients and took-off for the return to Nha Trang at low level, flying out the valley and down the coast. The Caribou landed at Nha Trang at 0730.

Appendix 2 to Incl 1

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APPENDIX 1

NIGHT MEDICAL EVACUATION MISSION

At 2030 in the evening of 21 November 1962, the chief of the Caribou evaluation branch of ACTIV was notified by the MAAG, Vietnam duty officer that there was an emergency requirement to evacuate nine victims of a Civil Guard truck accident from the airfield at Song Mao, on the coast about 110 miles northeast of Saigon. The duty officer stated that he had been unable to get anyone to fly the mission because there was no airfield lighting at Song Mao. The duty officer explained that he was appealing to the chief of the ACTIV Caribou project team in an effort to obtain Caribou support for the mission.

The chief of the ACTIV Caribou evaluation branch contacted the officer in charge of the local Caribou detachment, and at 2330, a Caribou was air-borne from Tan Son Nhut, with a Navy doctor and two corpsmen aboard, arranged for by MAAG.

The pilots were familiar with the route from Saigon to Song Mao and received navigational assistance en route from the navigational facilities of Paris Control at Tan Son Nhut. As the aircraft approached Song Mao, the Caribou crew observed a flare in the vicinity of the airstrip. Shortly afterward, ground personnel turned on the lights of eight jeeps to illuminate the runway.

Song Mao is a laterite and PSP strip at 851 feet elevation and approximately 3,000 feet long. Aside from the problems of a night landing with expedient lighting, there was a hazard peculiar to Song Mao - a mountain ridge on the northeast edge of the airfield traffic pattern jutting approximately 800 feet above field elevation. The Caribou pilots' familiarity with the terrain enabled them to position their landing to avoid this hazard.

On a short final approach, the Caribou crew received a second flare from the ground, presumably launched to illuminate the landing area just before touchdown. Actually the flare momentarily blinded the pilot, though he was able to continue to a successful landing.

On arrival at Song Mao at approximately 0030, the Navy doctor and two corpsmen accompanying the Caribou found nineteen victims instead of nine, four or five of whom had already died. Many of the others were critically injured. The injured were loaded immediately and flown to Nha Trang, location of the US Army 8th Field Hospital and of ARVN dispensary facilities. Lights from the jeeps aided the take-off. The delivery at Nha Trang was completed at 0200 hours and the Caribou crew returned to Saigon at 1610, 22 November 1962.

Appendix 1 to Incl 1

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